

Comparison of the effect of mindfulness based on stress reduction and dialectical behavior therapy on reducing depression in mothers with handicapped children in rehabilitation centers

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ABSTRACT

Background and Aim: A disabled child causes many psychological problems in family members, especially the mother. The aim of this study was to compare the effect of mindfulness based on stress reduction and dialectical behavior therapy on reducing depression in mothers with disabled children in rehabilitation centers.

Materials and Methods: In this quasi-experimental study (pre-test-post-test with control group) 45 mothers of children with disabilities in Erzurum were selected by convenience sampling method and randomly divided into two experimental groups (15 people) and one control group (15 people) were located. For the first group of stress-based mindfulness training (8 sessions); 2 one-and-a-half-hour sessions per week) and 8 sessions for the second group of dialectical behavior therapy; Two weeks of one and a half hour sessions were performed and the control group did not receive any training. All subjects filled out the Beck Depression Inventory (short form) before and after the training. Analysis of covariance was used to analyze the data.

Results: The results showed that the mean scores of depression in the mindfulness training group based on stress reduction compared to the dialectical behavior therapy group and in the dialectical behavior therapy group compared to the control group in the post-test decreased significantly ($p < 0.05$).

Conclusion: The results of study showed that dialectical mindfulness and behavioral therapy training is more effective in reducing depression in mothers with disabled children. Therefore, paying attention to the effectiveness of mindfulness and dialectical behavior therapy on reducing depression in mothers with disabled children is of particular importance.

Keywords: Stress Reduction Mindfulness, Dialectical Behavior Therapy, Depression, Mothers, Children with Disabilities

INTRODUCTION

The birth of each baby brings changes in lifestyle, educational attitudes and family finances. This is more severe when the child is born with special needs and causes psychological stress for family members.¹ The presence of a disabled child makes important changes in the normal life cycle of families.²

In such a situation, although all family members are harmed,³ however, the burden of caring for these children is on the mothers. Mothers face more psychological problems due to their caring role and more responsibilities towards their children.⁴ In addition, major depressive disorder in these mothers is higher than normal mothers.⁵

In general, depression is associated with mood swings, including symptoms of depressed or irritable mood and lack of interest and pleasure. Depressed person feels sadness, worthlessness, despair and lack of self-confidence, suffers from social interactions, sleep disorders, nutrition and even psychotic disorders; So that these problems and complications reduce his efficiency, role playing and responsibility in society.⁶

Epidemiological statistics in different countries indicate different prevalence of depression in different societies. Studies show the prevalence of clinical depression in Turkey more than other countries. So that women are more likely to suffer from depression (30.5%) than men (16.7%).⁷

The prevalence of depression has led to the introduction and study of various treatments for it, including medication and psychotherapy. However, although research supports the effectiveness of existing therapies,

this effectiveness is relative and there is still no treatment that can be considered a definitive solution to the problem of depression.⁸

On the one hand, medication has several side effects, and on the other hand, despite the fact that many psychotherapies have been effective in treating depression, we still face a high rate of recurrence of depressive symptoms.⁹ Researchers have proposed combining mindfulness-based approaches with existing cognitive-behavioral interventions. The most common method of mindfulness training is stress-based mindfulness training, which is known as stress reduction program and relaxation program.¹⁰

This approach was introduced by Kabat Zin in the 1970s after the establishment of a stress reduction clinic at Massachusetts Medical Center. In recent years, mindfulness in the scientific community has attracted a lot of attention and means to pay attention to specific, purposeful, current and free from judgment methods.¹¹

The basis of mindfulness is derived from Buddhist meditation practices that have the capacity for consistent and intelligent attention and awareness that goes beyond thought; Increasing mindfulness is not a technique. Rather, it can be described as a way of understanding that requires knowing of personal feelings.¹²

According to Byron, useful adaptation strategies of mindfulness to create and maintain awareness are: lack of judgment and evaluation, patience, initiating mind, not getting involved, accepting and letting go.

Several studies have shown the effectiveness of mindfulness based on reducing stress in life expectancy,

reducing depression,¹³ stress and anxiety,¹⁴ and increasing general health¹⁵ in mothers with disabled children. In fact, our minds often interpret and deduce what is happening and evoke reactions and feelings of stability.

In people who are prone to depression, the mind is constantly drawn to negatively disturbing thoughts, and what makes people psychologically vulnerable to depression is easy access to negative thoughts, memories, and attitudes when mood swings are low and thoughts are ruminating about thoughts and bodily sensations are negative.

Mindfulness is a skill that allows us to perceive events in the present less than they are distressing, and when we are aware of the present, our focus is no longer on the past and the future, while most mental health problems focus on the present is from its past.¹⁶ On the other hand, a review of texts and psychological studies shows that emotion regulation is an important factor in determining health and having a successful performance in social interactions, and its deficiency is associated with endocrine and exogenous disorders.¹⁷

Emotion regulation includes all conscious and unconscious strategies that are used to increase, maintain, and decrease the emotional, behavioral, and cognitive components of an emotional response. Emotion regulation training means reducing and controlling negative emotions and how to use emotions positively.¹⁸ In recent years, group training in emotion regulation has a positive effect on physical and psychological well-being;¹⁹ reduced symptoms of depression,²⁰ anxiety and stress.²¹

Ahmadi and Jadidi²² found that mothers with handicapped kids in using emotion management plans (emotion management) are at a minor level than their normal counterparts. Also based on studies conducted by Moradi Kia et al.²³ and Beyrami et al.²⁴ emotion regulation training can be effective in reducing mothers' psychological distress. According to Garnevisky and Craig, people use a variety of emotion management strategies in the face of stressful situations, including rumination, self-blame, other blame, catastrophizing, and positive refocusing.²⁵

In fact, there is a growing consensus that many of the clinical features of these disorders (anxiety and depression) result from a failure to adaptively regulate unwanted negative emotions. This perspective is consistent with the basic principles of cognitive therapy, which include correcting and changing negative assessments about oneself, the world, and the future.²⁶

Thus, adaptive emotion regulation is associated with self-esteem and positive interactions, and an increase in the frequency of positive emotional experiences leads to effective meditation in stressful situations.²⁷

Given the importance of this issue, research gap and lack of empirical research to compare the effect of these trainings on reducing depression in parents with disabled kids, especially mothers with physical and mental disabled children, this study aims to compare the effect of mindfulness based on stress reduction and emotion rule and depression of mothers of disabled kids in comprehensive physical therapies centers.

MATERIALS AND METHODS

The method of the present study was quasi-experimental (pre-test-post-test) using two experimental groups and one

control group. The statistical population included mothers with physical and mental disabled kids who referred to counseling centers under the auspices of Erzurum (Turkey) and complained of depression in the spring of 2020. The sample consisted of 45 depressed mothers with physical and cerebral disabled children who were selected by convenience sampling and randomly divided into two experimental groups (15 people in each group) and one control group (15 people).

The diagnosis of depression in mothers with disabled children was made by a clinical psychologist of the counseling center of the General Department of Welfare of Erzurum Province based on a clinical interview and based on the diagnosis criteria of the fourth edition of the Diagnostic and Statistical Manual of Mental Disorders (DSM-IV). The criteria for entering the group were:

1) Minimum diploma education; 2) Age range 22 to 37 years; 3) Get 1 standard deviation above the average in the Beck Depression Test; 4) Failure to receive psychological treatment at the same time as the purpose of treatment and 5) Conscious and voluntary satisfaction of attending meetings. Exclusion criteria were: 1) divorced or widowed women; 2) patients who were undergoing psychotherapy at the time of selection; 3) female-headed households; 3) not attending more than one meeting; 4) The occurrence of a specific problem was considered during the research.

After receiving permission from the General Welfare Office of Erzurum Province, in coordination with the authorities and obtaining informed consent from the mothers with physical and mental disabled kids, it was decided that the mothers at the appointed time in the amphitheater of the General Welfare Office of Erzurum Province in Turkey. Necessary facilities such as computer and video projector were included.

After the presence of the mothers and the communication of the researcher with the participants, the mothers' questions were answered and how to complete the questionnaires was explained. After performing the pre-test (Beck Depression Inventory - short form), an agreement was reached on the date of the next sessions and 45 depressed mothers with disabled children who met the inclusion criteria in 2 groups of 15 people were randomly selected (Group 1: stress-based mindfulness training and group 2: emotion regulation training) and a group of 15 controls were divided.

After selecting the test groups, in the introductory session of the experimental groups, they gave a summary of the goals and methods of mindfulness training and emotion regulation. They were not under any other educational or medical program. Experimental group 1: Mindfulness training based on stress reduction (8 sessions; two sessions of one and a half hour per week) and experimental group 2, emotion regulation training (8 sessions: two sessions of one and a half hour per week) and the control group did not receive any training.

In these sessions, educational materials were presented to the participants in PowerPoint format along with pictures and homework related to each session. In the next sessions, homework was reviewed and after the training sessions, post-test (Beck Depression Inventory - short form) was measured in all 3 groups (2 experimental groups and one control group). It should be noted that in

order to comply with the ethical principles of the research, after testing of all three groups, the mentioned trainings were also performed for the control group.

The following tools have been used to collect information:

Beck Depression Inventory (short form): The Beck Depression Inventory is one of the most well-known tests for measuring depression that has been developed by Beck. The test consists of 21 items and each item has 4 sentences, each of which grades a symptom of depression from zero to three. The total score of each person in Beck Depression Inventory is obtained with the of scores in all aspects. The validity and reliability of the Beck questionnaire have been repeatedly reviewed and the results have been reported at a high level. In 1988, Beck et al. Reported the reliability coefficient of internal consistency of the questionnaire items from (0.73) to (0.86) and the correlation coefficient of Beck Depression Inventory with MMPI scale of 0.74. A recent study conducted at Ankara University of Medical Sciences showed a validity of 0.70 for this test and a reliability of 0.77 in a healthy and clinical population.²⁸

Intervention methods: Stress reduction mindfulness training: For the first group, stress reduction mindset training was taught in 8 sessions and each session for an

hour and a half. This treatment method was developed by et al Kabat-Zinn²⁹ and its effectiveness on depression, anxiety, stress, self-esteem and psychological adjustment has been confirmed.

Emotion regulation training: For the second group, emotion regulation training is taught in 8 sessions and each session lasts for an hour and a half. This treatment has been developed by Gratz & Gunderson [30] and its effectiveness on depression, anxiety and stress has been confirmed.

Data analysis: Finally, the data were analyzed using SPSS-20 statistical software. In the data description section of mean and standard deviation and in the inferential section of univariate analysis of covariance with assumptions of normal distribution of scores through Shapiro-Wilk test, the assumption of homogeneity of regression slope using group interaction*, pre-test and Levin test for homogeneity and standard error of the dependent variable is used in the groups.

RESULTS

Table 1 presents descriptive findings (mean and standard deviation) related to depression scores before and after training for research groups.

Table 1. Descriptive characteristics of depression variables in sample individuals in the group of mindfulness training, emotion regulation training and control in pre-test and post-test

| Variable | Group | Pre test | | Post test | | Adjusted Mean |
|------------|---------------------------------|----------|-----------|-----------|-----------|---------------|
| | | M | Std. dev. | M | Std. dev. | |
| Depression | Depression Mindfulness Training | 30.73 | 6.97 | 24.87 | 6.48 | 23.95 |
| | Emotion regulation training | 29.67 | 6.42 | 26.33 | 5.77 | 26.40 |
| | Control | 28.80 | 6.68 | 28.00 | 6.76 | 28.86 |

Univariate analysis of covariance was used to compare the effect of mindfulness based on stress reduction and emotion regulation on reducing depression in mothers of disabled kids in rehabilitation centers. It should be noted that before presenting and reviewing the results of tests related to the analysis of research hypothesis, first the test of assumptions of analysis of covariance was performed. Important assumptions of analysis of covariance include the normality of the dependent variable distribution, the homogeneity of the regression slope, and the homogeneity of the variance error in the groups.

Shapiro-Wilk test was used to assess the normal distribution of depression scores. The results showed that depression scores in both pre-test and post-test in the three groups followed the normal distribution ($p < 0.05$) (Table 2).

Table 2. Evaluation of normal distribution of depression data using Shapiro-Wilk test

| Variable | Group | Pre test | | Post test | |
|------------|---------------------------------|--------------|-------|--------------|-------|
| | | Shapiro Wilk | Sig. | Shapiro Wilk | Sig. |
| Depression | Depression Mindfulness Training | 0.973 | 0.9 | 0.926 | 0.235 |
| | Emotion regulation training | 0.965 | 0.779 | 0.973 | 0.903 |
| | Control | 0.931 | 0.279 | 0.911 | 0.142 |

The hypothesis of homogeneity of the regression slope was investigated using the interaction of group * pretest showed that the assumption of regression homogeneity slope for depression scores is established ($p < 0.05$) (Table 3).

Table 3. Results of the assumption of homogeneity of regression slope for depression in the studied groups

| S Ch | SS | df | MS | F | Sig. |
|-------------------------|--------|----|-------|-------|-------|
| Group effect * Pre-test | 5.413 | 2 | 2.706 | 1.123 | 0.336 |
| Error | 94.018 | 39 | 2.411 | | |

Also, the hypothesis of homogeneity of variance-dependent variance error (depression) in the groups was investigated using Levin test (Table 4). The results show that there is no significant difference in the variance error of depression in the three groups ($p < 0.05$). Therefore, all assumptions of univariate analysis of covariance are valid.

Table 4. The results of Leven test for equality of depression variance error in the studied groups

| F | Df1 | Df2 | Sig. |
|-------|-----|-----|-------|
| 1.686 | 2 | 42 | 0.198 |

The results of univariate analysis of covariance showed that by adjusting the pre-test scores, the rate of post-test depression of mothers with disabled children in rehabilitation centers had a significant difference in mindfulness training, emotion regulation training and control ($p = 0.001$, $F = 36.76$). The intensity of the effect is equal to 0.64 (Table 5).

Table 5. Results of analysis of covariance for comparison of post-test depression in the studied groups

| S Ch. | SS | df | MS | F | Sig. | Eta S |
|-----------------|----------|----------|----|---------|-------|-------|
| Pre-test effect | 1593.636 | 1593.636 | 1 | 657.134 | 0.001 | 0.941 |
| Group Effect | 178.31 | 89.155 | 2 | 36.763 | 0.001 | 0.642 |
| Error | 99.43 | 2.425 | 41 | | | |
| Total | 33130 | | 45 | | | |

Based on the results of LSD post hoc test, it can be seen that the mean scores of depression in the stress-based mindfulness training group significantly decreased compared to the control group and the emotion regulation training group. Also, the mean scores of depression in the emotion regulation training group compared to the control group decreased significantly (Table 6).

Table 6. Results of LSD post hoc test for pairwise comparisons of depression in the study groups

| Comparisons | M Std. | Error Std. difference | Sig. |
|--|--------|-----------------------|-------|
| Mindfulness training - emotion regulation training | -2.45 | 0.57 | 0.001 |
| Mindfulness Training – Control | -4.91 | 0.57 | 0.001 |
| Emotion Regulation Training-Control | -2.46 | 0.57 | 0.001 |

DISCUSSION

The aim of this study was to compare the effect of mindfulness based on reducing stress and emotion regulation on reducing depression in mothers of disabled kids in rehabilitation centers. Emotion regulation training group and in the emotion regulation training group significantly decreased compared to the control group in the post-test. There is no report in the research literature on comparing the effectiveness of these trainings on reducing depression in mothers of disabled kids; But the obtained result is in line with the results of Khaleqipour and Zargar,¹³ Ebrahimi and Foroughuddin Adl³¹ and Satarpour et al.⁷ That mindfulness training is effective in reducing depression and increasing mothers' hope. It is also consistent with the results of studies by Sattarpour et al.²⁰ Moradi Kia et al.²³ and Beyrami et al.²⁴ that emotion regulation training is effective in reducing depression and psychological distress in mothers.

Vulnerability to recurrence of depression has been shown to result from repeated links between depressed mood and negative and hopeless patterns of thinking that lead to cognitive and neurological changes.³² According to this hypothesis, people who have been depressed in the past differ in pattern of thinking from those who have never been depressed. Thus, despite the defective pattern of thinking, it is always possible for a person to enter a new period of depression due to mild mood swings and as a result of reactivation of the pattern of thinking.

Thus, mindfulness training teaches people how to break habitual skills (located in the central motor) and turn information processing resources toward neutral goals

such as breathing or sense of the moment, and prepare the ground for change. Therefore, re-applying attention to this method will prevent the increase or persistence of depression and defective processing cycles will be less available. From this perspective, the chances of depression spreading or persisting are reduced.¹⁶

Also, mindfulness training in the sense increases a person's attention and awareness of physical and mental feelings and leads to a feeling of trust in life, deep compassion, deep love for others and original adoption of life events; It can make a person aware of his ability; deal with life stresses; be professionally and constructively successful and have the necessary cooperation and partnership with others as a member of society. Because one of the important aspects of mindfulness therapy is that people learn to deal with negative emotions and thoughts and experience mental events in a positive way.¹⁸ In this study, mindfulness training can play an important role in lowering depression in mothers of children with physical and mental disabilities, despite such positive processes.

Emotion regulation, on the other hand, involves countless regulatory processes and plans that include mental, physical, civil, and behavioral dimensions. These strategies include rumination, self-expression, avoidance, and inhibition. Cognitive aspects of emotion regulation, like other behavioral and social dimensions, are actually used to manage emotions to increase adaptation and are part of adaptation strategies that are associated with experiencing and treating emotional and physical disorders.³³

Accordingly, Ahmadi and Jadidi²² found that there is a significant difference between emotion regulation strategies

in mothers with and without disabled children. Therefore, emotion regulation and especially positive emotion regulation strategies reduce negative emotions and increase positive emotions and adaptive behavior.³⁴ Finally, it is necessary to mention that the findings of the present study were obtained with regard to some limitations: One of the main limitations of the present study was the lack of follow-up to evaluate the continuity of treatment results. Another limitation of monogamy is that this study was performed only on women, so more caution should be exercised in generalizing its findings to men.

CONCLUSION

In general, it can be concluded that mindfulness based stress training is more effective in reduction depression in mothers with physical-mental disabled kids than emotion regulation training. According to the results of this study and its confirmation through previous studies, the use of mindfulness based stress training along with emotion regulation training is suggested as an effective program to reduce depression, especially mothers with disabled children by the organization. The welfare of the country and counseling centers should be considered by the authorities with the aim of guiding and helping the parents of exceptional kids for better and faster adjustment and increasing the mental health of the parents.

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